



**Research Article**

**FETOMATERNAL OUTCOME BEYOND 40 WEEKS PERIOD OF GESTATION**

**Nasreen Noor\* , Renu bhagat , Shazia Parveen and Syed Manazir Ali**

Department of Obstetrics and Gynaecology Faculty of Medicine  
J. N. Medical College A. M. U., Aligarh, U.P., India

**ARTICLE INFO**

**Article History:**

Received 6<sup>th</sup> November, 2018

Received in revised form 15<sup>th</sup>

December, 2018

Accepted 12<sup>th</sup> January, 2019

Published online 28<sup>th</sup> February, 2019

**Key words:**

Induction of labor, Prolonged pregnancy,  
Perinatal morbidity,

**ABSTRACT**

**Introduction:** The timely onset of labor and birth is an Important Determinant of perinatal outcome. Pregnancy beyond due date is one of the most frequent clinical dilemma faced by the obstetricians, whether to choose expected management with ante partum fetal surveillance or to prescribe induction of labor remains controversial. So, the present study is conducted to analyse fetomaternal outcome beyond the expected date of delivery.

**Material and Methods:** The prospective clinical study was conducted in the Department of Obstetrics and Gynaecology J.N.M.C.H, A.M.U. during 2016-2018. Total of 250 antenatal women beyond 40 weeks of gestation were included in the study after fulfilling the inclusion and exclusion criteria. After Institutional Ethics Committee approval all recruited women were divided into 3 groups. Group I – Women with 40-40weeks 6days period of gestation. Group II – Women with 41-41 weeks 6days period of gestation. Group III- Women with 42 weeks period of gestation.

**Results:** Out of 250 pregnant women , 181(72.4%) women were in 40-40weeks 6days , 56(22.4%)women were in 41-41 weeks 6days and 13(5.2%) women belongs to 42 weeks period of gestation. Most of the cases were primigravida 136(54.4%)with Mean±S.D maternal age of 24.92±3.28 years & mean gestational age of 40+40wks 6days Out of 402 cases 201 (50%) underwent spontaneous labor & 201( 50 %) needed induction of labor. Most common mode of delivery was vaginal constituting 177(70.8%. Meconium stained liquor was present in 36(14.4%) of women. Fetal distress with meconium stained liquor were the common indication for caesarean section. 14 (5.6% ) babies were admitted to NICU most of the admissions 6(33.33%) were for meconium aspiration syndrome. Intrauterine fetal demise occurred in 5 cases(27.78%) without any risk factors. Pregnancy beyond 40wks increases the chance of oligohydramnios , Caesarean section for fetal distress and NICU admission for meconium aspiration syndrome.

**Conclusion:** Elective induction of labor with an unfavourable cervix should be discouraged and waiting till 41weeks with proper feto-maternal surveillance and then inducing improves maternal and neonatal outcome.

Copyright©2019 Nasreen Noor et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**INTRODUCTION**

Pregnancy beyond expected date is one of the most frequent clinical dilemma faced by the obstetricians, whether to choose expected management with ante partum fetal surveillance or to prescribe induction of labor remains controversial. About 4 to 15% of pregnancies result in being prolonged pregnancy, depending on the method to calculate the gestational age. Other probable causes include primigravidas , women with previous h/o prolonged pregnancy ,maternal obesity ,male gender of the fetus, fetal adrenal hypoplasia and anencephaly .As the pregnancy goes into 38 weeks period of gestation and beyond the placenta starts showing infarcts and calcifications

\*Corresponding author: **Nasreen Noor**

Department of Obstetrics and Gynaecology Faculty of Medicine  
J. N. Medical College A. M. U., Aligarh, U.P., India

along with atherosclerosis of decidual and chorionic blood vessels .Maternal risks include emergent caesarean delivery, vacuum extraction or forceps delivery, cephalopelvic disproportion, cervical rupture, perineal lacerations, dystocia, large fetus, fetal death, postpartum hemorrhage. Neonatal risks are asphyxia, aspiration, admission to intensive care after birth, bone fracture, peripheral nerve paralysis and others.<sup>[1,2,3]</sup>The period after40weeksisof utmost concern for the patientaswellas obstetrician. There is more incidence of decreased amniotic fluid, meconium passage and macrosomia after 40wks. So , most of the obstetrician prefer termination of pregnancy before 42wksasthe riskof fetal mortality is doubled in pregnancies which has crossed42wks than the pregnancies at 40wks.<sup>[4,5]</sup>Because of these risks, currently the American College of Obstetricians and Gynecologists (ACOG).<sup>[6]</sup> recommends initiation of antenatal surveillance between 41

weeks and 42 weeks of gestation because perinatal morbidity and mortality increases with advancing gestational age. Even a study on mother's attitude mentions the acceptance of conservative management beyond 41 weeks by the pregnant women. Thus, the purpose of our study is to find out fetomaternal outcome in pregnancy beyond 40 weeks.

**MATERIAL AND METHODS**

The present study was a prospective observational study and includes 250 pregnant women with known last menstrual period, history of regular menstruation, singleton pregnancy, gestational age from 40 weeks or beyond and aged between 20 and 40 years. The exclusion criteria were history of gestational hypertension, diabetes mellitus, intrauterine growth restriction, hydrops fetalis, congenital malformations, twins, polyhydramnios and premature rupture of membranes. After approval by Institutional Ethics Committee all recruited women were observed for baseline demographic and obstetric data including age, parity and past medical events at first antenatal visit. After taking a detailed history and examination all women provided an informed written consent and were divided into three groups based on gestational age.

- Group I** – Women with 40-40 weeks 6 days period of gestation.
- Group II** – Women with 41-41 weeks 6 days period of gestation.
- Group III** - Women with 42 weeks period of gestation.

The Primary outcome measures were to evaluate the spontaneous labor rate, induction rate, mode of delivery, maternal complications, and rate of caesarean section for fetal distress, oligohydramnios, meconium aspiration syndrome, Apgar score, NICU admission, perinatal mortality while secondary outcome were birth weight, number of perinatal death. The correlation of fetomaternal outcome were computed for the three groups. 'P' values of less than 0.05 were considered statistically significant.

**RESULTS**

In our study population out of 250 pregnant women, 181 women were in Group I, 56 women were in Group II and 13 women belong to Group III. Maternal baseline characteristics between the groups in terms of age, parity and gestational age (Table 1). Induction of labour was done in 106 women (42.4%) women while 144 women (57.6%) women had spontaneous labor. In Group comparison maximum number of women were induced in Group I 73 women (40.33%). Spontaneous labor was maximum in Group I 108 women (59.62%) followed by Group II 26 women (46.43%) and Group III 10 women (76.9%) respectively. (p<0.05) (Table 2). Out of 250 women, 177 (70.8%) women delivered by vaginal route, 71 (28.4%) women undergone LSCS while only 02 (0.8%) women had instrumental delivery. In Group I 70.7% (128 women) had normal vaginal delivery Vs 28.18% (51 women) undergone LSCS, while in Group II and Group III 71.43% (40 women), 69.23% (9 women) had vaginal delivery and 28.57% (16 women), 30.77% (04 women) had undergone LSCS respectively. (p > 0.05) (Figure 1.) The most common indication for LSCS in Group I and Group II was fetal distress and in Group II and Group III was fetal distress and MSL followed by Fetal distress with non reactive CTG. This distribution was significant (p<0.05). (Figure.2) In the study population

225 (90%) women had presence of oligohydramnios while 25 (10%) had absence of it. Oligohydramnios was present in 20 (11.05%) women Vs 4 (7.14%) Vs 1 (7.69%) in the three groups respectively. There was no significant difference in the presence of oligohydramnios between the three groups ('p'>0.05). (Figure.3) Meconium was present in 36 (14.4%) women while 214 (85.6%) women had no meconium. Meconium was present in amniotic fluid in 25 (13.8%) women Vs 7 (12.5%) Vs 4 (30.7%) women in the three groups respectively. There was no significant difference in the presence of meconium in all the three groups. (Figure.4) Total of 17 women had maternal complications, 52.9% had wound infection, 29.4% had cervical and perineal tear, 11.7% had PPH and 5% developed fever. (Table 3). The Mean ± SD of Apgar score at 5 minute was 7.74 ± 1.38 Vs 7.91 ± 0.64 Vs 7.92 ± 0.7566 in the three groups respectively. ('p' > 0.05) and The Mean ± SD of birth weight in our study was 3.01 ± 0.48 in Gp I, 3.02 ± 0.28 in Gp II and 2.98 ± 0.4 in Gp III. (p > 0.05). Out of 250 neonates, 03 (1.66%) Vs 01 (1.79%) Vs 02 (15.38%) neonates developed MAS in the three groups respectively. 14 neonates were admitted in NICU, 09 neonate in Group I, 04 neonate in Group II, and 01 neonate in Group III. There were 18 neonatal morbidities and 05 neonatal deaths in all the three groups. There was no significant statistical difference between the groups (p>0.05). (Table 4).

Table 1. Demographic profile of the study population

Parameters	Group I (n= 181)	Group II (n=56)	Group III (n=13)	'p' value
Age (years) (Mean ±SD)	24.79±3.58	24.92±3.28	25.38±4.78	>0.05
Gravidity (%)				
Primi	53.03	64.29	30.77	<0.05
Multi	46.97	35.71	69.23	
Gestational age (weeks)(n=%)	72.4	22.4	5.2	<0.05

Table 2 : Distribution of women according to type of labor

Type of Labor	Group I		Group II		Group III		Total (%)	Chi <sup>2</sup> Value	P-Value
	No.	(%)	No.	(%)	No.	(%)			
Spontaneous	108	59.67	26	46.43	10	76.93	144	57.6	5.028 P < 0.05
Induced	73	40.33	30	53.57	3	23.07	106	42.4	
Total	181	100	56	100	13	100	250	100	

Table 3- Maternal complications

Maternal Complications	Group I		Group II		Group III		Total (%)	Fisher Value	P-Value
	No.	(%)	No.	(%)	No.	(%)			
Fever	1	7.69	0	0	0	0	1	5.88	3.815 P> 0.05
PPH	2	15.39	0	0	0	0	2	11.77	
Tear	4	30.77	1	25	0	0	5	29.41	
Wound Infection	6	46.15	3	75	0	0	9	52.94	
Total	13	100	4	100	0	0	17	100	

Table 4- Neonatal outcome

Neonatal Outcome	Group I	Group II	Group III	P value
Birth weight	3.01 ± 0.48	3.02 ± 0.37	2.98 ± 0.47	P > 0.05
Meconium	25 (13.8%)	7 (12.5%)	4(30.7%)	P > 0.05
Apgar Score <7 at				P > 0.05
5 mins	7.74 ± 1.38	7.91 ± 0.64	7.92 ± 0.75	
NICU Admission	09	04	01	P > 0.05
MAS	03 (1.66%)	01(1.79%)	02(15.38%)	P < 0.05
Neonatal Death	05	--	--	

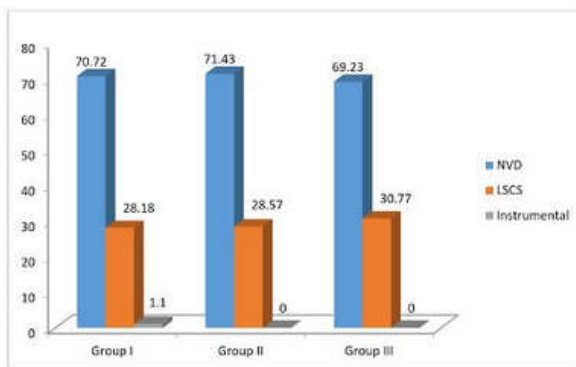


FIGURE 1:- MODE OF DELIVERY

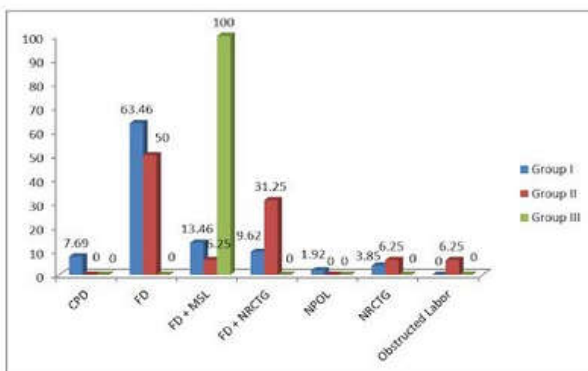


Figure 2- Indication of caesarean section

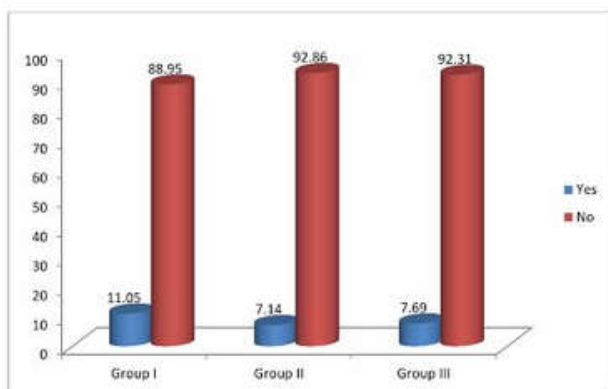


Figure 3 : Presence of oligohydramnios

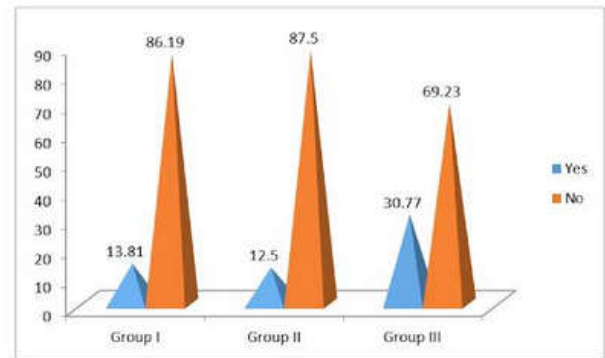


Figure 4 : Presence of meconium

DISCUSSION

Postterm pregnancy associated with an increased risk of postnatal mortality and morbidity including meconium aspiratiom syndrome, oligohydramnios, macrosomia, fetalbirth injuries, septisemia, rate of non reassuringfetal heart rate, fetal distress in labour and maternal complication increased LSCS rate, cephalopelvic disproportion, cervical tear , dystocia, postpartum haemorrhage.<sup>[7]</sup> Should pregnancy be allowed to run a natural course (or) is intervention necessary? Currently ACOG recommends labor induction at 42 weeks in women with favourable cervices and cervical ripening and fetal surveillance in women with unfavourable cervices, but recognizes that management of women beyond 40 completed weeks of gestation is unclear. American College of Obstetricians and gynaecologists, (1997). Thus, the purpose of this study is to assess pregnancy outcomes at 40-40weeks 6days, 41-41weeks 6days and beyond 42 weeks of gestation. In our study population out of 250 pregnant women , 181(72.4%) women were in Group I, 56(22.4%)women were in Group II and 13(5.2%) women belongs to Group III.TheMean±SD of age of study population in Group I was 24.79±3.58 years, in Group II was 24.92±3.28 years and 25.38±4.78 years in Group III.(Table 1)

The difference between the groups for parity was statistically significant and all the groups were therefore not comparable(p< 0.05). Our results are comparable with the studies<sup>[8,9]</sup>who found statistically significant difference in three groups while they are inconsistent with<sup>[10,11]</sup>.The difference could be because we have calculated gestational age with LMP while in their study gestational age was calculated by first ultrasound, majority of cases were between 41–42 weeks and only 1.19 % was >42 weeks.

In the present study, induction of labour was done in 106 women (42.4%) women while 144 women (57.6%) women had spontaneous labor. In Group comparison maximum number of women were induced in Group I and Group II as compared to Group III . Spontaneous labor was maximum in Group I and the difference between the groups was statistically significant.(p<0.05) (Table 2).There was no difference in number of spontaneous labour Vs induced labour .<sup>[12]</sup>

It was observed that there was no significant difference in mode of delivery in the three groups.(Figure 1). Our findings are in accordance of the study.<sup>[9]</sup>The rate of LSCS beyond 41 wks is 30 (36.58 %) in their study . This high rate maybe due to induction of all cases after 41 wks. Thelabor complications

increases progressively from 40 weeks period of gestation onwards with increased operative vaginal delivery and caesarean section seen at 41 and 42 weeks period of gestation .<sup>[13]</sup>

The most common indication for LSCS in Group I and Group II was fetal distress and in Group II and Group III was fetal distress and MSL followed by Fetal distress with non reactive CTG. This distribution was significant (  $p < 0.05$ ). (Figure.2) .There was no significant difference in the presence of meconium in all the three groups, but it was observed from our results that the incidence of meconium stained liquor significantly increases as the gestational age advances after 41 weeks  $\pm$  6 days (12.5% Vs 30.7%). The incidence of MSL were 29% vs 16% in 41 and 40 weeks <sup>[14]</sup> so more vigilant and careful fetal monitoring is required in 41 week group. (Figure 3) The incidence of oligohydramnios was 24%, 33% and 33.3% in the three groups respectively. There was no significant difference in the presence of oligohydramnios between the three groups (  $p > 0.05$ ). (Figure 4).

Maternal morbidity is not significant among the three groups respectively while maternal morbidity like increased rate of caesarean section, PPH, perineal tear, sepsis and cervical tear are more common in 41 week group as compare to 40 week group<sup>[15]</sup>. This is attributed by more caesarean section rates in 41 week group. (  $p > 0.05$ %) (Table.3) APGAR score gradually reduced with the progression in post dated pregnancy. There was no significant difference between the birth weights of the three groups (  $p > 0.05$ ). There was no statistical difference between the groups for NICU admission and our results were in harmony with the study<sup>[12]</sup> who also found rate of NICU admission as 7.5% at 40-41 wks & 15.71% at 41-42 wks. In our study, there were 18 neonatal morbidities and 05 neonatal deaths in all the three groups. There was no significant statistical difference between the groups (  $p > 0.05$ ). (Table.4)

## References

1. Caughey AB, Bishop JT. Maternal complications of pregnancy increase beyond 40 weeks of gestation in low-risk women. *J Perinatol*. 2006;26 (9):540-5.
2. Olesen AW, Westergaard JG, Olsen J. Perinatal and maternal complications related to postterm delivery: a national register-based study, 1978-1993. *Am J Obstet Gynecol*. 2003;189 (1):222-7.
3. Heimstad R, Romundstad PR, Eik-Nes SH, Salvesen KA. Outcomes of pregnancy beyond 37 weeks of gestation. *Obstet Gynecol*. 2006;108 (3):500-8.
4. Grubb DK, Rabella YA, Paul RH. Post term pregnancy fetal death rate with antepartum surveillance. *Obstetrics and Gynecology*; 1992;79:1024-1026.
5. Royal college of gynecologists and obstetricians. Induction of labour. Evidence based clinical guideline; 2001:24-26

6. ACOG Practice Bulletin. Clinical management guidelines for obstetricians-gynecologists. Number 55, September 2004 (replaces practice pattern number 6, October 1997). Management of Postterm Pregnancy
7. Cunningham FG, Leveno KJ, Bloom SL, Hauth JC, Larry CG III, Wenstrom KD. Postterm pregnancy. 23rd ed. In: William's Obstetrics. New York: McGraw-Hill Companies; 2010. pp. 832-41. 16.
8. R.Bhriegu R, Agrawal M, Hariharan C. Assessment of maternal and perinatal outcome in postdated pregnancy. *Journal of DattaMeghe Institute of Medical Sciences University*. 2017 Jan 1;12(1):35.
9. Swati Francis, A. Rajaratnam. A retrospective study on fetomaternal outcome beyond 40 weeks period of gestation. *PARIPEX-Indian Journal of Research* ISSN-2250-1991. December 2015.
10. Paras Dobariya PV, Shah PT, Ganatra HK. Fetomaternal outcome in pregnancy beyond 40 weeks. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2017 Jan 31;6(2):527-31.
11. Harwal NS, Melkundi MS. Assessment of maternal and perinatal outcome in pregnancy beyond 40 weeks of gestation. *Journal of Evolution of Medical and Dental Sciences-JEMDS*. 2017 mar 6;6(19):1546-51
12. Akshaya Kumar Mahapatro, Sunita Samal. Fetomaternal outcome in pregnancy beyond 40 weeks. *Int. J Pharma Bio Science* 2015; 6(2): 53-58.
13. James M A *et al* .Fourty weeks and beyond: pregnancy outcome by weeks of gestation .*Obstet Gynecol*2000;96: 291-4.
14. R Marahatta (Khanal), H Tuladhar and S Sharma. Comparative study of post term and term pregnancy in Nepal Medical College Teaching Hospital (NMCTH) Nepal Med Coll J. 2009; 11:57-60.
15. Patil R, Dave A. A study of maternal and perinatal outcome in induction of labour at 40 weeks and 41 weeks of gestation. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*. 2017 Jan 11;5(8):2704-8.

### How to cite this article:

Nasreen Noor *et al* (2019) 'Fetomaternal Outcome Beyond 40 Weeks Period of Gestation', *International Journal of Current Advanced Research*, 08(02), pp.17476-17479. DOI: <http://dx.doi.org/10.24327/ijcar.2019.17479.3317>

\*\*\*\*\*